

Remarks

The Office Action dated September 18, 2006 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 5-19 and 25-28 are pending in this application. Claims 5-12, 17-19, and 24-26 stand rejected. Claims 13-16 and 27-28 are withdrawn from consideration.

The rejection of Claims 5-7, 9, 10, 12, 17, 18, and 26 under 35 U.S.C. § 102(b) as being anticipated by Gou et al. (US 5,307,309) is respectfully traversed.

Gou et al. describe a corium protection assembly that includes a perforated base grid located below the pressure vessel and spaced vertically above the containment vessel floor. A plurality of layers of laterally adjoining protective blocks are positioned on the grid for protecting the containment vessel floor.

Independent Claim 9 of the present application recites in part "An assembly comprising: a containment vessel comprising a suppression pool, a drywell and a floor, said drywell comprising a sidewall extending from said floor, said sidewall separating said suppression pool from said drywell; a reactor pressure vessel installed inside said containment vessel; a base grid disposed below said pressure vessel and spaced vertically above said floor of said containment vessel to define a sump therebetween, said base grid comprising a top plate; a layer of refractory material disposed on top of said top plate; an annular base grid shield wall extending vertically upward from said base grid, said base grid shield wall having a configuration comprising at least one of: (a) said base grid shield wall spaced inwardly from said drywell sidewall to define an annular channel therebetween; and (b) said base grid shield wall positioned adjacent said drywell sidewall; at least one flow baffle in said sump . . .".

Gou et al. do not describe nor suggest an assembly as recited in Claim 9. Particularly, Gou et al. do not describe nor suggest an assembly that includes a base grid disposed below the pressure vessel and spaced vertically above the floor of the containment vessel to define a sump therebetween, with the base grid comprising a top plate, and at least one flow baffle located in the sump. Rather, Gou et al. describe a perforated base grid mounted on a plurality of laterally spaced I-beams that rest on the containment vessel floor, and a plurality of laterally adjoining protective blocks disposed on the top of the base grid. There is no description or suggestion in Gou et al. of a top plate on the base grid. The Office Action, at page 3, asserts that the first layer of protective blocks is a top plate. Applicants disagree with this assertion and submit that one skilled in the art would not consider the first layer of a plurality of layers of protective blocks a top plate. One skilled in the art would not consider a block to be equivalent to a plate. Also there is no description or suggestion in Gou et al. of at least one flow baffle located in the sump. The Office Action, at page 3, asserts that "the combination of interconnected top blocks 40a and middle blocks 40b having joints 52 to allow flow" is a flow baffle. Applicants disagree with this assertion because the joints 52 provide a flow path of liquid and there is no showing of a flow baffle located in the joints 52. Applicants also submit that even if *arguendo*, that the combination of interconnected top blocks 40a and middle blocks 40b having joints 52 were considered flow baffles, they are located on top of the base grid and not in the sump as recited in Claim 9 of the present application. Claim 9 defines the sump as the area below the base grid and the floor of the containment. Accordingly, Applicants submit that independent Claim 9 is patentable over Gou et al.

Claims 5-7, 10, and 12 depend from independent Claim 9. When the recitations of dependent Claims 5-7, 10, and 12 are considered in combination with the recitations of Claim 9, Applicants respectfully submit that Claims 5-7, 10, and 12 likewise are patentable over Gou et al.

Independent Claim 17 recites in part " A nuclear reactor comprising: . . . a core catcher cooling system located in said primary containment and disposed below said reactor pressure vessel, said core catcher cooling system comprising: a base grid having a top plate and a bottom plate, said base grid spaced vertically above said floor of said containment vessel to define a sump therebetween; a layer of refractory material disposed on top of said top plate; . . . at least one flow baffle in said sump . . . ."

Gou et al. do not describe nor suggest a nuclear reactor as recited in Claim 17. Particularly, Gou et al. do not describe nor suggest a core catcher cooling system located in the primary containment and disposed below the reactor pressure vessel, with the core catcher cooling system comprising a base grid having a top plate and a bottom plate, the base grid spaced vertically above the floor of said containment vessel to define a sump therebetween; a layer of refractory material disposed on top of said top plate; and. at least one flow baffle in said sump . . . . Rather, Gou et al. describe a perforated base grid mounted on a plurality of laterally spaced I-beams that rest on the containment vessel floor, and a plurality of laterally adjoining protective blocks disposed on the top of the base grid. There is no description or suggestion in Gou et al. of a top plate on the base grid. The Office Action, at page 3, asserts that the first layer of protective blocks is a top plate. Applicants disagree with this assertion and submit that one skilled in the art would not consider the first layer of a plurality of layers of protective blocks a top plate. One skilled in the art would not consider a block to be equivalent to a plate. Also there is no

description or suggestion in Gou et al. of at least one flow baffle located in the sump. The Office Action, at page 3, asserts that "the combination of interconnected top blocks 40a and middle blocks 40b having joints 52 to allow flow" is a flow baffle. Applicants disagree with this assertion because the joints 52 provide a flow path of liquid and there is no showing of a flow baffle located in the joints 52. Applicants also submit that even if *arguendo*, that the combination of interconnected top blocks 40a and middle blocks 40b having joints 52 were considered flow baffles, they are located on top of the base grid and not in the sump as recited in Claim 17 of the present application. Claim 17 defines the sump as the area below the base grid and the floor of the containment. Accordingly, Applicants submit that independent Claim 9 is patentable over Gou et al.

Claims 18 and 26 depend from independent Claim 17. When the recitations of dependent Claims 18 and 26 are considered in combination with the recitations of Claim 17, Applicants respectfully submit that Claims 18 and 26 likewise are patentable over Gou et al.

For the reasons set forth above, Applicants respectfully request that the Section 102(b) rejection of Claims 5-7, 9, 10, 12, 17, 18, and 26 be withdrawn.

The rejection of Claims 5-7, 9, 10, 12, 17, 18, and 26 under 35 U.S.C. § 102(b) as being anticipated by Szabo et al. (US 5,263,066) is respectfully traversed.

Szabo et al. describe a nuclear reactor having a core catcher positioned below the reactor vessel. The core catcher includes a receptacle 20 having a bottom and a side wall. The bottom has a flat peripheral portion and a pyramid shaped center portion. The receptacle includes several layers 22 of a refractory material with the inner surface (facing the reactor vessel) coated with a metal sealing skin. Fall dampening devices 76 are placed on top of the bottom of the receptacle

immediately below the reactor vessel to dampen the force of a single block from the bottom of the reactor.

Szabo et al. do not describe nor suggest an assembly as recited in Claim 9. Particularly, Szabo et al. do not describe nor suggest an assembly that includes a base grid disposed below the pressure vessel and spaced vertically above the floor of the containment vessel to define a sump therebetween, with the base grid comprising a top plate, and a layer of refractory material disposed on top of the top plate. Rather, Szabo et al. describes a core catcher receptacle having a floor that includes several layers 22 of a refractory material with the inner surface (facing the reactor vessel) coated with a metal sealing skin, and also fall dampening devices 76 placed on top of the bottom of the receptacle immediately below the reactor vessel. The fall dampening devices are formed from an assembly of tubes resting on a foundation welded to the metal sealing skin 24. Therefore, Szabo et al. do not or suggest a layer of refractory material disposed on top of the top plate of the base grid. Accordingly, Applicants submit that independent Claim 9 is patentable over Szabo et al.

Claims 5-7, 10, and 12 depend from independent Claim 9. When the recitations of dependent Claims 5-7, 10, and 12 are considered in combination with the recitations of Claim 9, Applicants respectfully submit that Claims 5-7, 10, and 12 likewise are patentable over Szabo et al.

Szabo et al. do not describe nor suggest a nuclear reactor as recited in Claim 17. Particularly, Szabo et al. do not describe nor suggest a core catcher cooling system located in the primary containment and disposed below the reactor pressure vessel, with the core catcher cooling system comprising a base grid having a top plate and a bottom plate, the base grid spaced

vertically above the floor of said containment vessel to define a sump therebetween; and a layer of refractory material disposed on top of said top plate. Rather, Szabo et al. describes a core catcher receptacle having a floor that includes several layers 22 of a refractory material with the inner surface (facing the reactor vessel) coated with a metal sealing skin, and also fall dampening devices 76 placed on top of the bottom of the receptacle 20 immediately below the reactor vessel. The fall dampening devices are formed from an assembly of tubes resting on a foundation welded to the metal sealing skin 24. Therefore, Szabo et al. do not or suggest a layer of refractory material disposed on top of the top plate of the base grid. Accordingly, Applicants submit that independent Claim 17 is patentable over Szabo et al.

Claims 18 and 26 depend from independent Claim 17. When the recitations of dependent Claims 18 and 26 are considered in combination with the recitations of Claim 17, Applicants respectfully submit that Claims 18 and 26 likewise are patentable over Gou et al.

For the reasons set forth above, Applicants respectfully request that the Section 102(b) rejection of Claims 5-7, 9, 10, 12, 17, 18, and 26 be withdrawn.

The rejection of Claims 11 and 19 under 35 U.S.C. § 102(b) as being anticipated by Gou et al. (US 5,307,309) is respectfully traversed.

At least for the reasons set forth above, Applicants submit that independent Claims 9 and 17 are patentable over Gou et al.

Claim 9 depends from independent Claim 9 and Claim 19 depends from independent Claim 17. When the recitations of dependent Claims 11 and 19 are considered in combination with Claims 9 and 17 respectively, Applicants respectfully submit that Claims 11 and 19 likewise are patentable over Gou et al.

For the reasons set forth above, Applicants respectfully request that the Section 102(b) rejection of Claims 11 and 19 be withdrawn.

The rejection of Claims 8 and 25 under 35 U.S.C. § 102(b) as being anticipated by Szabo et al. (US 5,263,066) is respectfully traversed.

At least for the reasons set forth above, Applicants submit that independent Claims 9 and 17 are patentable over Szabo et al.

Claim 8 depends from independent Claim 9 and Claim 25 depends from independent Claim 17. When the recitations of dependent Claims 8 and 25 are considered in combination with Claims 9 and 17 respectively, Applicants respectfully submit that Claims 8 and 25 likewise are patentable over Szabo et al.

For the reasons set forth above, Applicants respectfully request that the Section 102(b) rejection of Claims 8 and 25 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Favorable action is respectfully solicited.

Respectfully submitted,



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